

IN THE CLAIMS

Please amend the claims as follows:

1-15. (Cancelled)

16. (Currently Amended) A system for delivering RF energy to an endocardial tissue, the system comprising:

a catheter having one or more electrodes proximate a distal end of the catheter, the catheter adapted for being positioned such that the one or more electrodes are adjacent the endocardial tissue, at least one of the electrodes including a tip electrode having a thermal time constant of approximately 240 ms; and

a power control system to provide power to the ~~one or more electrodes~~ tip electrode, the power having a plurality of alternating on portions and off portions, one set of adjacent on and off portions defining a duty cycle;

wherein the power control system delivers an energy pulse of between approximately 0.01 ms to 4 ms, and the on portions and off portions of the duty cycle are chosen as a function of thermal decay at the electrode and depending on one or more static thermal properties of the one or more electrodes have a ratio of between 50% - 100%.

17. (Currently Amended) The system of claim 16, ~~wherein one or more static thermal properties of an electrode include a thermal constant of the electrode~~ wherein the duty cycle chosen ranges from 80% to 100%.

18. (Currently Amended) The system of claim 16, wherein ~~one or more thermal properties includes a mass of the electrode~~ the platinum tip electrode includes an approximately 5 mm tip with a diameter of approximately .094 inches.

19. (Currently Amended) The system of claim 16, wherein ~~one or more thermal properties includes surface area of the electrode~~ the RF energy has a period of between 120 ms and 240 ms.

20. (Currently Amended) The system of claim 16, wherein ~~the one or more static thermal properties of the electrode include one or more of mass of the electrode, shape of the electrode, and thermal constant of the electrode~~ the RF energy has a period of greater than 240 ms.

21. (Original) The system of claim 16, wherein one of the one or more electrode includes a tip electrode.

22. (Original) The system of claim 16, wherein one of the one or more electrodes includes a ring electrode.

23. (Currently Amended) A method of RF ablation comprising:
delivering RF energy to a tissue from an a tip electrode having a thermal constant of approximately 240 ms;
~~determining a thermal decay over time proximate the electrode;~~ and
~~changing a duty cycle of the RF energy in response to the thermal decay~~
controlling the RF energy such that the RF energy is delivered in an energy pulse of between approximately 0.01 ms to 4 ms, and a duty cycle having a ratio of between 50% - 100%.

24. (Currently Amended) The method of claim 23, wherein ~~determining a thermal decay includes measuring a temperature proximate the electrode at a first time and at a second later time~~ the RF energy has a period of between 120 ms to 240 ms.

25. (Currently Amended) The method of claim 23, wherein ~~determining a thermal decay includes determining one or more thermal properties of the electrode~~ the duty cycle ranges from 80% to 100%.

26-28. (Cancelled)